



# EVANS FLOOD After Action Report September 13, 2013



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## **After Action Report**

**September 13, 2013**

Prepared by

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for

The City of Evans, Colorado

&

The Evans Fire Protection District



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## Introduction

Beginning the morning of September 13<sup>th</sup> through September 21<sup>st</sup>, 2013 the City of Evans was impacted by a major flood along the South Platte River. Due to the severity of the flooding, a non-certified levee (berm) breached in several locations along the South Platte River near the southeast side of Evans. The flood damaged several areas of the City with the most serious damage in the Historic Evans area east of Highway 85. A second area suffering significant damage was in the southern half of the industrial area, located south of 37<sup>th</sup> St. and west of Highway 85; including Brantner Road, Industrial Parkway, and 49<sup>th</sup> St. Specific damage included the destruction of two-hundred-eight mobile homes in the Eastwood Village and Bella Vista mobile home communities and serious damage to fifty-six single family dwellings and duplexes on Salida Ct. and Riverside Parkway. One commercial building sustained extensive damage, and moderate damage was experienced by other residential and commercial buildings in the Historic Evans area and 49<sup>th</sup> Street. The City of Evans Wastewater Treatment Plant #1 also sustained major damage. Additionally, the flood led to some damage to above ground oil wells and equipment in and around Evans and portions of unincorporated Weld County. The flood caused complete destruction of 1.43 miles of city streets, costing \$1.3 million in repairs. The jewel of the City, the Riverside Park Complex, sustained severe damage which led to closure of the park until long-term permanent repairs can be made. It is estimated that the floods caused \$17 million in damage to City properties and infrastructure and the dollar amount of private losses are unknown. The flooding forced the closure of Highway 85 for three days; cutting off travelers, emergency services, and construction crews from Denver and Cheyenne, forcing them to use alternate routes and delaying response times. Figure 1 is an outline of the areas that were affected by the flood.



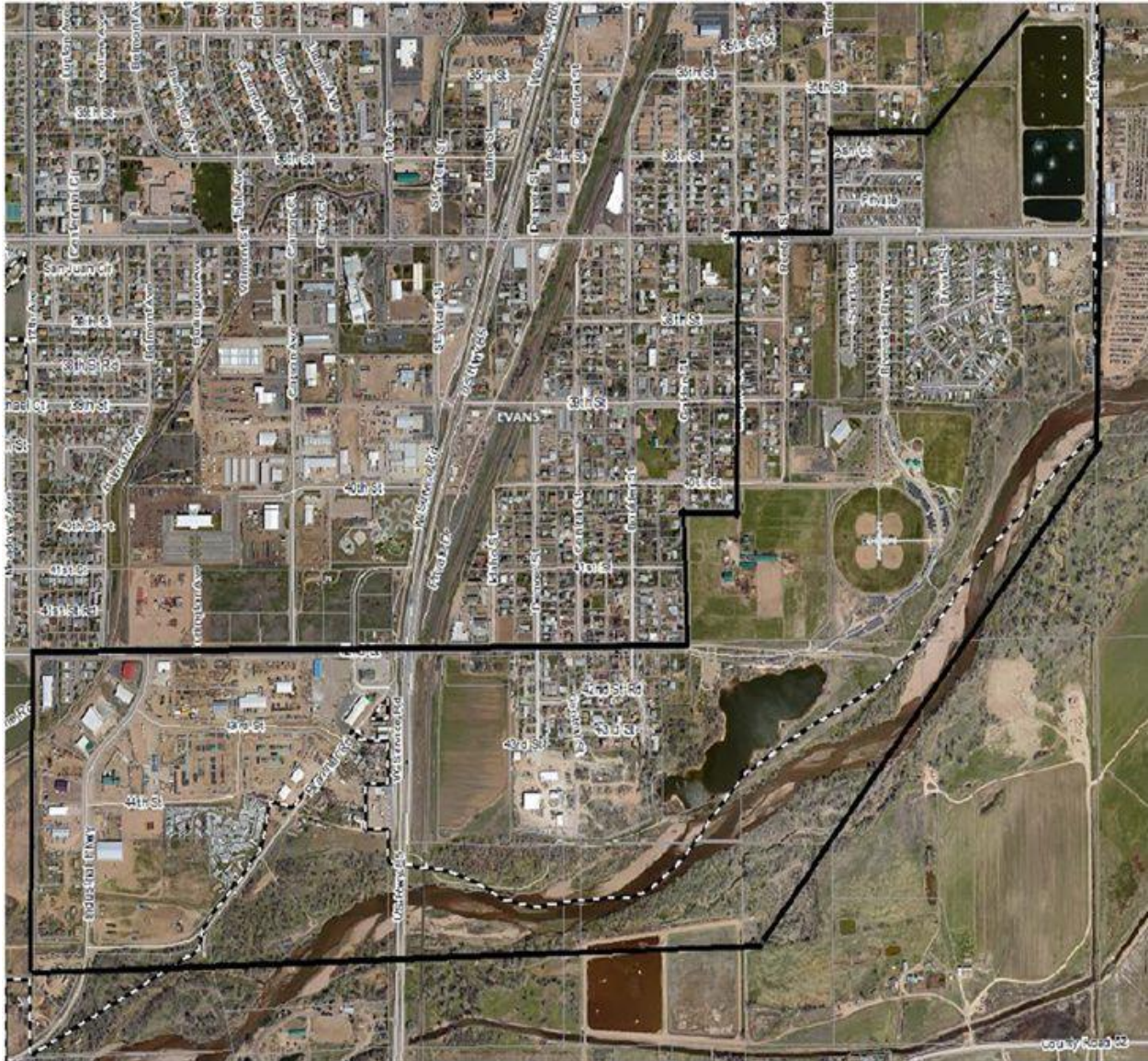
Over one-thousand (three-hundred families) Evans residents were forced from their homes and the entire Historic Evans area was evacuated for twenty-four hours. Two mobile home communities holding over two-hundred mobile homes cannot be reoccupied due to serious safety and public health risks. Nearly eighty residential homes and thirty commercial buildings were damaged during the flood. The Evans Fire Protection District with the assistance from Greeley Fire Department and Kersey Fire Protection District Swift Water and Dive teams rescued forty-two residents trapped in flood waters. The teams also assisted over one-hundred people to higher ground and out of the flood area.

Because of the damage to Wastewater Plant #1, sewer service was unavailable to approximately seventy percent of the City for a period of eight days. Many Evans businesses were located within



the affected area and were forced to be closed while the Wastewater Treatment Plant was shut down. Early estimates showed that there was over \$2.5 million in damage to the wastewater treatment plant.

During the week of emergency and stabilization operations, staffs from the City of Evans and the Fire District were fully committed to flood related activities. Due to the lack of sewer service the Evans Community Complex was closed except for critical business.



(Figure 1) Outline of the areas affected by the flood. Picture was provided by the City of Evans GIS.



## Pre-Flood Events

The Front Range was impacted by an unseasonal rain storm from Monday, September 9, 2013 through Monday, September 16, 2013. During this period, 8 to 10 inches of rain fell over the Front Range<sup>1</sup>. Due to the unprecedented rainfall over the region, three river confluences (St.Vrain Creek, Boulder Creek, and the Big Thompson River) were inundated with flood water. Both the St. Vrain Creek and the Big Thompson River feed the South Platte River just south of Evans. By the time flood waters reached the Evans area,



the South Platte River could not handle the large amount of water rushing into it. Due to the increased volume of water and flow rates, the berms that were built around the area were unable to accommodate the water. There were a total of twenty-four (24) breaches in the berm throughout the Evans area. These breaches caused catastrophic damage throughout the area, leading to several lifesaving rescues, evacuations, destruction to homes, and shutdown of Wastewater Treatment Plant # 1.

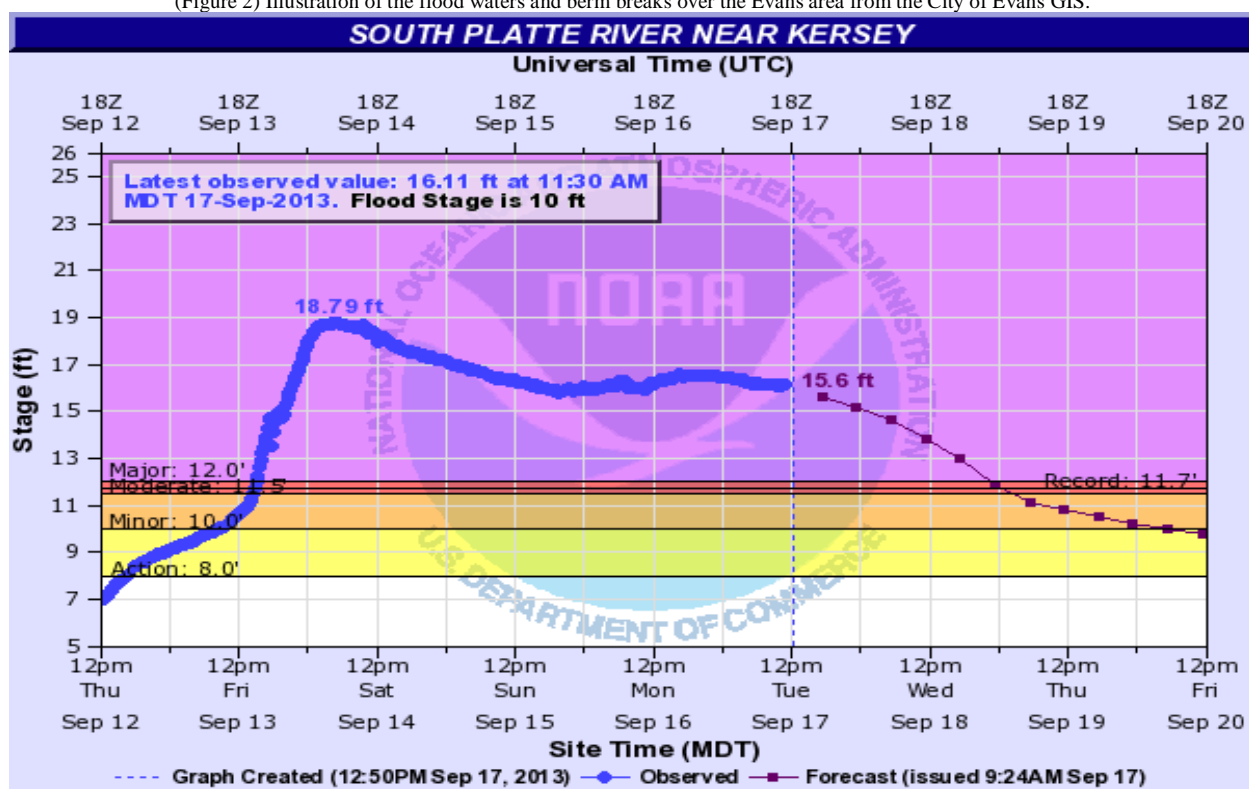
On the evening of September 12, 2013, the City of Evans Public Safety Committee met to discuss the risk of flooding due to the storms and river conditions upstream. The decision was made to go to neighborhoods that are prone to flooding and advise residents of the risk of flooding and ask residents to voluntarily evacuate in case flooding should occur. On the morning of September 13, 2013, staffs from Public Works and the Evans Fire Protection District were monitoring river conditions when they noticed a rapid rise of the river and experienced some bubbling coming from the berms. The decision was made to move immediately from the area. Moments later, water in the area started to rise rapidly and evacuations were well under way. Early indications showed that the flood levels would be around 12.1 feet which is 2 feet over the 10 foot flood stage for the area. However, by September 14, 2013, the river was at 18.7 feet (8.7 feet over the 10 foot flood stage). Figure 2 shows the width of the flood plain and berm breaches.

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<sup>1</sup> Data retrieved from the National Weather Service. Preliminary Precipitation Totals Map - Sept 9-16, 2013



(Figure 2) Illustration of the flood waters and berm breaks over the Evans area from the City of Evans GIS.



KERC2(plotting HGIRG) "Gage 0" Datum: 4578.02' | Observations courtesy of CO Division of Water Resources  
 Stream Gauge readings form September 12<sup>th</sup> through September 20<sup>th</sup>

## Weather Overview

Precipitation for the month of September was 5.61, which was 4.65 inches above the normal of 0.96 inches. This was the most precipitation ever recorded in the area for the month of September. Two separate days during the month reported over one inch of precipitation, with 1.11 inches and 2.01 inches measured on September 12<sup>th</sup> and September 14<sup>th</sup>. New daily rainfall records were established on September 12<sup>th</sup>, September 14<sup>th</sup> and September 23<sup>rd</sup>.

Daily Precipitation Records:

Date	Precipitation	Old Record	Year Last Set
September 12 <sup>th</sup>	1.11	0.95	2012
September 14 <sup>th</sup>	2.01	0.61	1912
September 23 <sup>rd</sup>	0.64	0.52	2000

## Top Five Wettest Septembers

Precipitation	Year
5.61	2013
4.67	1961
3.70	1902
3.42	1938
2.95	2012

## Flood Information

Flooding is not uncommon in and around the City of Evans. The City was affected by flooding in 1965, 1973, 1985, 1997, and again in 2013. However, the damage that was caused by these previous floods cannot compare to the damage caused by the flood in September of 2013. Most of the flooding that Evans has experienced in the past has been the result of strong summer rain storms or spring runoff. Most of the flooding in the past has only affected low lying areas and affected only a few residents and businesses. The amount of moisture experienced in September 2013 is not common and was a rare occurrence. Below is a graph that illustrates the floods that the City of Evans has experienced over the years and their corresponding flood stages and flow rates.

Station Name	Water Year	Stage Ft	Discharge ft/s	2013		Recurrence
				Stage Ft	Discharge ft/s	
Boulder Creek an Mouth near Longmont	1938	6.94	4,410	8.05	5,110	10-25 yrs.
South Platte River at Denver	1965	10.85	17,600	n/a	n/a	n/a
South Platte River at Kersey	1965	10.75	23,500	18	n/a	n/a
Big Thompson River at La Salle	1965	6.77	1,960	n/a	n/a	n/a
South Platte River at Kersey	1973	11.73	31,500	18	n/a	n/a
South Platte River near Henderson	1973	11.67	33,000	n/a	n/a	n/a
St. Vrain Creek below Longmont	1980	6.37	2,380	6.86	2,620	50 yrs
Big Thompson River at Loveland	1980	10.1	6,970	10.48	6,250	n/a
South Platte River at Englewood	1995	7.21	9,710	3.21	1,140	n/a
Boulder Creek at 75th Street	1995	7.85	1,950	10.67	700	n/a

## Participating Agencies

American Red Cross	Weld County Food Bank
Christian Aid Ministries	FEMA Region VII
City of Denver Fire Department	Weld County PIO's
City of Evans Engineering	WB Supply
City of Evans GIS	City of Greeley City Council
City of Evans City Management	All Around Trucking
City of Evans Police	Colorado National Guard
City of Evans Public Works	Colorado State Patrol
City of Evans Parks and Recreation	Weld County Office of Emergency Management
City of Greeley Public Works	AIMS Community College
City of Greeley City Manager	Weld County Sheriff Department
City of Greeley Fire	Weld County Public Works
City of Greeley Police	City of Greeley Parks and Recreation
City of Greeley Wastewater	Ault Fire Protection District
Evans City Council	Beauregard Excavating
Evans Fire Protection District	Dog place
Galeton Fire Protection District	HDR
Greeley-Evans School District 6	South West Colorado Incident Management Team
Heatwaves Hot Oil Service	Colorado Oil Gas Administrator
Journey Christian Church	Fischer Construction
Kersey Fire Protection District	Jimmy John's
LaSalle Fire Protection District	Church of Jesus Christ of Latter Day Saints
Milliken Fire Protection District	Anadarko Oil and Gas
Noble Energy	Colorado Department of Transportation
Representative Dave Young	Eaton Fire Protection District
Select Energy	Reliable Field Services
Town of Milliken Police Department	Samaritan's Purse
Town of Milliken Public Works	Summit View Church
University of Northern Colorado	Boy Scouts of America
Waste Chasers	Colorado Department of Emergency Management
Weld County Commissioners	United Way
Weld County Youth Corps	Waste Management



## Sustains

The City of Evans, the Evans Fire Protection District, supporting agencies from around the state, and local businesses performed very well under difficult and extreme circumstances with the resources available, and they should be recognized. In the following section, some of the major points that were identified as “having gone well” during the incident and early phases of recovery are presented.

### **Early disaster declaration and Delegation of Authority.**

During the first twenty-four hours (24) the City of Evans declared a local disaster. By declaring a disaster early, it allowed emergency funding to become available to assist with response operations. The declaration also assisted with receiving support from Weld County and the State of Colorado, and later FEMA. Within twenty-four hours after the flood passed through the south and east sides of Evans, City Officials determined that they needed assistance with managing the disaster. Local officials made a request to the state for an Incident Management Team. On Sunday, September 15<sup>th</sup> the South West Colorado Type 3 Incident Management Team assumed command of the incident under a delegation of authority from the City of Evans, the Evans Fire Protection District and the State of Colorado. This team transferred command back to the City of Evans and the Evans Fire Protection District on Saturday, September 21<sup>st</sup>. Southwest IMT was on scene for eight days and assisted in managing the emergency repairs to the berm breach in Riverside Park. Southwest IMT also assisted with the beginning stages of the recovery process. If City Officials had not accurately predicted the impact of the floods, they would have had to manage the incident on their own, causing additional strain on the community and costing the tax payers more during the recovery process.

### **No Fatalities or injuries:**

In spite of all the damage to mobile home parks, residential houses, and commercial buildings, there were no fatalities. Due to the quick thinking of Incident Command and local officials, determination of the impacted area led to the evacuation of the two mobile home parks and residential homes within the area impacted by rising flood water. If the decision was not made or delayed in any way, the loss of lives would have been devastating. During the response to the flood, there were also no major injuries reported from workers or residents.

### **Laying of the temporary sewer lines to the City of Greeley's Wastewater treatment feeder lines.**

After Evans Waste Water Treatment Plant # 1 was forced to shut down, nearly seventy percent of Evans residents and business could not flush. At the time there was not an estimated time the plant would be down or how long residents would be without sewer services. City officials and management from the wastewater treatment plant, met with city officials from the City of Greeley to discuss what options there were to get sanitation operations back up and running. Officials from both communities determined that one of the best options was to lay 1,915 feet of pipe line from 37<sup>th</sup> St. and Pueblo St. to 35<sup>th</sup> St. and just west of Empire to a manhole that accesses a feeder line to the City of Greeley's wastewater treatment plant. The process to come up with the solution and to complete the project only took eight days. Quick collaboration and decision making definitely shortened the time which the wastewater plant was inoperable and residents and business were without sewer service.

### **Removal of debris and installation of temporary roads.**

In the aftermath of the flood, the process to begin cleanup started within the first few weeks. A temporary road was installed just south of Eastwood Village Mobile Home Park to start removing damaged homes. The process to remove all 208 damaged mobile homes from Bella Vista and Eastwood Village took about eighteen months to complete. If it was not for the due diligence of city officials, county officials, and landowners, this process could have taken longer, leaving the scar of the flood visible and pose a health and environmental risk for surrounding neighborhoods.

### **Initial Recovery Phase.**

In the beginning phases of recovery, staff filling recovery roles did an impeccable job working with the state recovery officials to start the recovery process. There were a lot of projects that needed to get started before the long-term recovery process began. There was a lot of hard work that went into writing grants to assist in the recovery process and to bring additional staff on to assist with the long-term recovery process. There is no doubt that not for all the work that everyone did in the initial recovery phase, the City of Evans would not be as far along in the recovery process as they are today.

### **Public Information**

Before the flood, there was not much of a public information process or department within the City. Within a week the City of Evans had a full-fledged communication system that was able to effectively communicate to the public on the information that was coming out from the flood. The communication played a huge role in providing information to the public to guide them through the recovery process and let them know how the city was working to recover.

### **Integrating staff with the IMT.**



While the IMT team was activated, some city and fire district staff were able to staff the command post with the incident management team. Positions that city staff were able to fill or assist with included; finance, PIO, and resource unit leader. By having staff intertwined with the IMT, it made it easier to transfer command back to the City of Evans and the Evans Fire Protection District when the time came. With finance located within the command post and able to work with staff on the IMT, they had a better understanding of the procurement process and were better positioned to manage the funds after command transferred back the city. Lastly, staff were able to experience how a type III IMT works, what their roles are and how they can manage a large scale incident.

## Takeaways

The following sections provide an overview of issues that were identified as needing improvement; including preparedness, response and recovery from disasters. The information was obtained through interviewing individuals that had a role in the preparedness, response, and recovery phases from the September floods. Additional data was obtained by reviewing documentation compiled throughout the incident. The takeaways listed below are not in any specific order or priority. Each section is broken down into categories based upon the department's involvement in the disaster.

## City Management

### **Issue:** Communications

**Background:** Communication is an issue identified in almost every After Action Report and was identified by all departments that participated in the data collection process for this report as an issue that needs further development and training. It was noted that there was not a defined chain of communication throughout the city, some staff were not aware of some the dynamics of the incident as they were developing. Some staff received information from multiple sources and in some cases the information was different, which made it difficult to determine which piece of information was the most accurate. In some cases staff became aware of events from social media before receiving information through normal communication channels.

**Recommendation:** The City needs to develop a process in which accurate and timely information is disseminated to essential staff. Additional training should be completed on the process that has been developed to ensure that appropriate and accurate information is passed along to individuals that need the information.

### **Issue:** Access Control (I.D. badges for staff and visitors)

**Background:** During the flood, the City didn't have a system that could control access of staff coming in and out of city facilities or areas damaged by the flood. There were a few incidents in which staff experienced difficulties accessing road blocks since security were staffing road blocks and couldn't distinguish critical staff members from residents or curious bystanders wishing to enter the flooded areas. It was identified that this could pose a safety and security threat not for just an incident, but for normal daily operations.

**Recommendation:** The recommendation to resolve this issue is to create and implement a city-wide credential program that will include all city employees, Fire District personnel, visitors, and media. Furthermore, at the direction of the City Manager, the program will be implemented by January 1, 2015.

**Issue:** Need a re-entry plan

**Background:** It was identified that there was not a post evacuation re-entry plan following the flood. This led to confusion as to when residents were allowed back into flood damaged areas to collect personal belongings, tour their damaged properties, or to start the cleanup and recovery process.

**Recommendation:** Create a re-entry plan that will include a detailed process that addresses when to allow contractors, residents, and media back into affected areas. The list should include who has priority and a separation between complete re-entry vs. touring the affected areas. The Office of Emergency Management along with staff from Public Works, Fire, Law, and City Management should be part of the process that creates the re-entry plan to ensure the accuracy of the plan and that all aspects of the re-entry process are covered. Once the plan has been created and implemented, training should be completed to ensure the plan is functional and to allow staff to become familiar with the process of the plan and how it works.

**Issue:** National Guard deployment was difficult in the beginning.

**Background:** In the initial response to the flood, it was difficult to get the National Guard to deploy to the Evans area. It is unclear if the delay was due to the resource ordering process or availability of personnel due to the severity of flooding affecting most of the Front Range.

**Recommendation:** There are a couple of recommendations to improve the process of ordering support from the National Guard. The first is to work with Weld County OEM and the State Regional Field Manager to streamline the ordering process to receive National Guard support. Another recommendation includes identifying trigger points to initiate a disaster declaration sooner. The City also needs to complete a target hazards identification assessment (THIRA) and a capabilities assessment of the community. By completing a THIRA and a capability assessment, the City of Evans and the Evans Fire Protection District can determine what resources are needed and can order needed resources earlier.

**Issue:** Communication with CDOT

**Background:** During the response to the September Flood, the City of Evans experienced some challenges with communicating with CDOT on road closures and access control along Hwy 85. With Highway 85 passing through the City of Evans and crossing over the South Platte River, this is a critical communication piece that needs improvement. Not having clear communications with CDOT could cause delays in receiving vital resources to the City. Also, the communications barrier with CDOT could create a delay in evacuating residents. .

**Recommendation:** There are a couple of methods in which communications can be improved with CDOT. One way that the City of Evans can improve communications with CDOT is for the City's EOC to be in contact with a CDOT representative staffed within the Weld County EOC.

Also, depending on the severity of the incident and availability of State Patrol Officers, City of Evans EOC can request a State Trooper to be assigned to the City's EOC to help bridge the communication gap between the City of Evans and CDOT.

### **Issue:** Disaster Recovery Plan

**Background:** In the aftermath of the flood and as the recovery process started, it was determined that the City of Evans did not have a disaster recovery plan. By not having a recovery plan in place before the flood, the recovery process was delayed while staff developed a plan. Many of the roads damaged by the floods still have not have been repaired, even though some of issues with road repair is due to funding. Repairs to roads or other critical infrastructure could have been addressed in a recovery plan. A great deal of debris was created by the flood and there was not a plan addressing the steps in which the City of Evans would remove debris in the event of a disaster. Since there was not a



recovery plan in place, there was a shortage of staff to fill recovery roles and no funds available to assist in filling positions within recovery. This left staffing weak and some staff had to take on additional tasks. By having a recovery plan in place prior to a disaster, many of the issues mentioned above could have been identified, led to final repairs being completed sooner and the recovery process shortened, creating a less stressful environment for staff and the public.

**Recommendation:** The City of Evans has identified that a disaster recovery plan needs to be created and implemented in the event that the City is faced with another disaster. With help from the Office of Emergency Management, flood recovery team, Weld County Office of Emergency Management, Colorado Division of Homeland Security and Emergency Management, and private entities, the City of Evans needs to create a robust disaster recovery plan. Once a disaster recovery plan has been created, the plan needs to be reviewed and revised annually. Staff needs to test the plan to ensure that the plan meets the needs of the community and that there are not gaps within the plan.

**Issue:** Updating and improving our mitigation plan.

**Background:** Due to the destruction that the flood caused and the number of residents impacted by the disaster, it was discovered that there needs to be modifications to the current mitigation plan. The biggest issue identified was mobile home parks built within a one-hundred year flood plain and not meeting current flood mitigation codes.

**Recommendation:** The City of Evans needs to look at revamping their flood mitigation plan to include strengthening their building codes for residential homes built within flood plain areas that follows FEMA guidelines. Also, the City of Evans needs to have a target hazard analysis completed to identify the risks within the community in order to strengthen future mitigation plans.

**Issue:** Updating logistics and getting additional appropriate MOU's signed.

**Background:** It was discovered after the September floods that the City of Evans needs to have more resources available to manage large scale incidents. During the flood, there was a shortage of barricades, equipment, and manpower to manage the incident.

**Recommendation:** The City of Evans needs to obtain as many resources as they can to assist with managing a large scale incident. However, since there will always be a shortage of resources due to financial restrictions, storage capabilities or the scale of an incident, the City of Evans needs to identify jurisdictions or private resources that can help the City during a disaster. Outside resources that have been identified should be compiled in a list and stored in a resource ordering book kept in the EOC for logistics to reference. The resource list should also be stored electronically and in WebEOC. The City of Evans should sign MOU's or appropriate other types of agreements with the organizations identified so that the "resources area available" can be accessed during a disaster. Any agreements made with outside organizations should be reviewed and revised annually to ensure that they are available when needed.



**Issue:** Assign City staff to take care of family members of staff working an incident.

**Background:** During the flood and into the early phases of recovery, staff spent countless hours working. This meant that staff was away from their families for extended periods of time. This caused a strain on many staff, who were not assured that their family's needs were being cared for during their long absences from home.

**Recommendation:** The City of Evans needs to create a program that establishes a corps of staff members who assist family members of staff working additional hours associated with managing a disaster. One of the key roles for the corps to be tasked with during a disaster is to ensure that family members of those that are working long hours during a disaster are taken care of. Some of the tasks that may be needed include help with communicating with family members, helping with getting groceries, or other daily needs that staff can assist with to show support while staff is away from home.

**Issue:** Review of the City of Evans Continuity of Operations Plan (COOP).

**Background:** It was noticed during the flood that the current COOP plan had not been updated since 2008-2009. This is a vital plan that allows the City to ensure that Primary Mission Essential Functions (PMEFs) continue to be performed during a wide range of emergencies. It was recommended that the COOP plan be reviewed, revised as needed, and implemented.

**Recommendation:** With the support of the Emergency Management Coordinator, City Manager and Department Directors, the COOP plan should be reviewed to ensure that the plan still meets the needs of the City of Evans. The team should make any changes to the COOP based on the findings while reviewing the plan. Once the plan has been updated and approved by City Council, each department should receive a copy of the plan and have training on the purpose of the plan along with when it should be implemented during a disaster.



## Public Works

**Issue:** Ability to hire extra help quickly.

**Background:** Additional staff was needed to assist with the cleanup and recovery from the September flood. However, the City was not able to hire those additional staff quickly. This meant that regular staff members were stretched thin; delaying the cleanup and recovery process along with daily operations, since there were not enough resources to support both flood related activities and daily operational needs.

**Recommendation:** The city should look into a procedure in which additional staff can be hired quickly to help support the additional tasks and hours necessary to manage a disaster and normal daily operations. Even though these positions may only be temporary, the process should be quick, yet thorough, to ensure that the security of the City and the community are still a top priority.

**Issue:** Asset management program.

**Background:** Through the process of managing resources during the September floods, some resources were lost or not accounted for after the incident was over. Also there was some confusion regarding what resources the City had or if resources were in use or not. It was later determined that the City does not have an asset management program that could have assisted with tracking resources. By not having a resource management program in place, the City could not accurately determine if they needed additional resources since they could not determine if all resources were used, returned, or damaged.

**Recommendation:** The City of Evans needs to create an asset management program that includes all resources within the City. Along with the asset management program the City should consider tying it into a resource management program that can be used throughout the City and the County in the event of a disaster. Together, these programs can help eliminate duplicating resources by knowing what resources the City has, where they are located, and if additional resources are needed to support an incident.

**Issue:** More traffic devices

**Background:** During the September floods, there was a constant shortage of traffic control devices throughout the City of Evans. The shortage of barricades was an issue that affected most of the county, region, and the state. As the City of Evans ran out of traffic control devices it became very difficult to obtain additional devices due to the shortage throughout the region and the state. The shortage of traffic control devices throughout the City of Evans required additional security to secure streets that were closed due to flood water and damaged roads. The manpower that was needed to standby and close streets created an additional cost for the City of Evans. The additional cost for security exceeded the cost of barricades that could have been used instead of officers to prevent traffic from entering flooded and damaged roads.

**Recommendation:** The City of Evans needs to consider purchasing additional traffic control devices and store them until they are needed. To help keep the cost down, the City of Evans can look at spreading out the cost of buying traffic control devices over a couple of years or possibly look for grants to help purchase them.

**Issue:** Incident Response team is needed.

**Background:** In the initial response immediately before and during the flood, there was a lack of coordination in identifying the threats or needs of the incident. Most of this was due to inexperienced staff dealing with a large scale incident and lack of training.

**Recommendation:** The City of Evans needs to create incident response teams whose main role is to identify the severity of the disaster, what resources are needed immediately and to estimate what resources will be needed soon. By getting these teams out to assess the situation, create strategies and identify needed resources, the incident will be manageable early on and resources will be available sooner during a disaster.

**Issue:** Need more incident management structure.

**Background:** In the initial response phase of the flood, there were some broken links in the incident management structure. There was a lot of confusion about what needed to be done and who was in charge of the incident.

**Recommendation:** The City of Evans needs to continue to enforce the completion of ICS 100, 200 and 700 certifications by all city staff. Additionally, staff should complete annual refresher training on ICS 100, 200, and 700. In addition to the basic ICS training, all management staff and any staff that work in the Emergency Operation Center should complete ICS 300 and ICS 400. There also needs to be an incident command identified before a disaster strikes. In the Emergency Operation Plan, departments should be clearly identified as the lead based on the type disaster. Within each of those lead departments, a list of individuals qualified to serve as department incident commander should also be created. With incident commanders identified early on, departments will know who will be in charge in the event of a disaster and an incident commander can be in place from the start.



**Issue:** Identify players and roles ahead of time.

**Background:** During the response to the September floods, there was some confusion regarding who needed to be involved in the response to and recovery from the disaster. Some staff were placed in roles that were outside of their normal daily duties and were confused on what their new tasks entailed. Initially, some of the roles were vacant as positions were being sorted out and filled. Due to the delay in filling roles and staff filling roles outside of their normal duties, valuable time was lost in the process as staff gained an understanding of their new position.

**Recommendation:** Identify the key players that will be involved in the response and recovery of a disaster. Each player that has been identified should understand what their roles are and how they will support the incident. Once the players and their roles are identified, each player should receive training in their new role as it relates to supporting an incident. Staff should participate in exercises throughout the year to maintain their expertise and to learn new concepts.

**Issue:** Insurance for critical infrastructures- risk assessment

**Background:** During the recovery stage, it was identified that some critical infrastructure within the City of Evans were not insured. This left the City of Evans bearing the cost of that critical infrastructure repair.

**Recommendation:** Obtain insurance on all critical infrastructure and non-critical infrastructure throughout the City. The first priority should be to get the critical infrastructure insured as soon as possible, then to prioritize the remaining infrastructure and insure them as funds become available.

**Issue:** Not enough flood stage information from upstream

**Background:** In the days leading up to the flood, there was a lack of accurate flood stage information available upstream. This information could have been used to determine how the City of Evans could be impacted by flood waters. Not having accurate flood stage information, the City of Evans was prevented from adequately determining the impact that they would be likely to experience. Currently there is not a stream gauge at the confluence of the Big Thompson River and St. Vrain Creek as they combine with the South Platte River.

**Recommendation:** Install a stream gauge on the South Platte River at the confluence of the Big Thompson and St. Vrain Creek. If the City of Evans cannot place the stream gauge on the South Platte River at the confluence of the Big Thompson and the St. Vrain Creek, they need to work with the County or the State to determine the best location for stream gauges to be placed. This location should be far enough up stream to adequately determine the river flow and stage before it reaches the City of Evans. By having a stream gauge after the confluence of the Big Thompson and the St. Vrain Creek, the City of Evans can have early warnings regarding flood conditions and be able to better prepare for flooding conditions.

**Issue:** Determination of duration of disaster declaration for emergency operations

**Background:** During the response of the incident, most staff did not know how long a disaster declaration lasted or what the allotted time frame was to make emergency repairs under a disaster declaration. Due to the confusion, some of the repairs made to the roads in the City of Evans and on the berm were classified as emergency repairs after the allotted time frame. The classification of emergency repairs after the allotted time frame created additional work for the finance department.

**Recommendation:** The City of Evans should provide training annually to Management Staff, Finance, and Public Works on the declaration process to ensure that staff are familiar with the most current rules.

**Issue:** Radio communication with fire, law and emergency

**Background:** During the flood the only way that Public Works was able to communicate with one other, emergency services or the EOC was by using cell phones. There were delays in relaying pertinent information via cellphones while simultaneously responding to the floods. Contributing factors to uneven cell phone coverage included; abnormally high volume of cell phone calls, cell tower overload or generally poor reception, all of which led to difficulty in communicating clearly. Another issue experienced with using cellphones was not having necessary phone numbers accessible.



**Recommendation:** Since CDOT, State Patrol, Weld County, the Evans Fire Protection District, and the Evans Police Department currently use 800 MHz radio systems, it is ideal for the City of Evans Public Works to purchase a compatible radio system. This system should include vehicle installed radios and hand held radios for staff. By purchasing a radio system that is compatible with systems used by surrounding departments and agencies, it allows Public Works to not only communicate with each other, but with emergency services, EOC, and surrounding agencies. Due to the financial cost of purchasing these systems, the City may want to look at grants to assist with such purchases. Currently, Public Works has an old VHS radio system that could be re-installed in their vehicles and staff could carry portable radios with them. This would allow Public Works staff a system to communicate with one another and to communicate with the EOC until they transition to the 800MHz radio system.

**Issue:** PW Staff at daily briefings

**Background:** During the September flood, most of Public Works and Support Staff throughout the City of Evans received information daily by word of mouth. Staff never received any clear communication of goals for the operational period or direction on their task for the day. In some cases staff received contradictory information which caused confusion and frustration. Later it was determined that not all staff working within the City or in the field were at the daily operational briefings. By staff not being at the operational briefings, this could have contributed to the confusion and prevented the sharing of information with everyone involved in each operational period.

**Recommendation:** To eliminate the confusion, at the beginning of every operational period, everyone involved in that operational period should be at the operational briefing. This will insure that everyone will get the same information from the incident commander. Also, during the operational briefing everyone should receive an Incident Action Plan that lists the goals and objectives for the operational period and provides an outline for their division or group's tasks for that operational period. At the end of the operational briefing, division and group leaders should meet with their teams to further outline their tasks for that operational period.

**Issue:** Maintain a list of damage assessment inspectors.

**Background:** Identification of the full extent of damage caused by the floods was delayed while the City of Evans looked for inspectors to assist with damage assessment. The City of Evans had a challenge finding inspectors due to the short time frame and the increased demand for inspectors throughout the region. Inspectors were needed to assist with assessing flood damage to private residences and critical infrastructure throughout the City of Evans. This delay also affected the residents since they could not return to their homes to start cleaning up or make repairs to their homes until their property was assessed and cleared for safe re-entry.



**Recommendation:** The City of Evans needs to create and maintain a list of inspectors throughout the region that can come assist the City with damage assessment in the event of a disaster. It is also recommended that MOU's be in place with inspectors who will assist the City of Evans during

a disaster. Both the Building Department and the Office of Emergency Management within the City of Evans should have a list of the inspectors and MOU's for the team of inspectors that can assist with damage assessment.

**Issue:** Develop damage assessment policies

**Background:** As soon as flood waters receded and flood damaged areas became accessible, staff from the City of Evans started damage assessment. At that point, it was identified that the City did not have a policy addressing a damage assessment process. Since there was not a policy, staff had to develop a plan before the assessment process could begin. While staff from engineering and the building department developed a plan to proceed with damage assessment, valuable time was lost from moving forward with property assessments. It was a detriment that there was not a defined starting point to prioritize which properties should be assessed first. Additionally, legal considerations for assessing damage were unclear. There were some properties that had damage assessments completed multiple times, creating additional work for staff, slowing down the assessment process and delaying residents' ability to return to their properties and start the recovery process.

**Recommendation:** In coordination with the Office of Emergency Management and the Building Department, a policy should be created that addresses how the City will conduct damage assessments after a disaster. Once the plan has been drafted and approved, an exercise should be completed on the policy to ensure that it meets the needs of the community. At the completion of the exercise, any issues that were identified throughout the exercise should be corrected. The damage assessment policy should be reviewed and revised every 1-2 years.

**Issue:** Review safety policies.

**Background:** During the response to the flood there were tasks staff were completing that were unsafe. In one incident, staff were driving on the berm near Riverside Park checking the integrity of the berm. Soon after they finished checking the berm and left the area the berm failed in the location in which staff members were driving. This situation brought up concerns about staff following department safety policies. It is unsure at this point if staff were following department safety policies.

**Recommendation:** It is recommended that safety plans be reviewed annually and updates to be made as needed. By reviewing safety policies, staff are able to refresh in their minds what the safety policy encompasses to ensure that all staff members follow it and work safely.

**Issue:** Budgeted contingency funding – fuel, supplies, etc.

**Background:** During the response to the September flood, many departments within the City of Evans quickly exhausted their remaining operation budgets for the year. Departments were forced to ask City Management to release emergency funds to assist with responding to and recovering



from the devastating flood. Not only did staff need additional funds to cover the cost of responding and recovering from the floods, but staff needed emergency funds to replace supplies and fuel to make it through the rest of the year. Public Works noted that they needed the underground fuel tanks refilled by the end of the year although they had already exhausted most of the annual fuel budget due to the flood.

**Recommendation:** During the budget process each year, each department should add a line item to their budget that is labeled “emergency contingency funds.” There should be enough funding in this budget to cover fuel, supplies, and manpower until the end of the event or until an emergency declaration can be signed and City Council can allocate funds from the city’s emergency funds.

## Police

**Issue:** Operation plan for calling in additional staff.

**Background:** During the flood, the police department did not have a plan in place to call in additional officers to assist with security, rescues, and normal daily operations. A plan would not only insure that enough officers were on staff, but also ensure that officers had enough time to recuperate from extended work hours before reporting back to duty.

**Recommendation:** Command staff should put a plan together that can be used during a disaster or an event that requires additional manpower. This plan should include the number of officers on duty at any given time to support an incident as well as normal operations. The plan could also include a change in work shifts if needed (i.e. going to two 12-hour shifts, the swing shift could be split to support the two shifts). The plan should allow staff appropriate time off to recover from the extended hours and be ready for the next rotation.

**Issue:** Damaged equipment tracking process.

**Background:** During the flood, the Evans Police Department had equipment, uniforms, and supplies that were damaged or lost. At the time there was not a process in place to track equipment that was damaged or lost. By not have a tracking process in place, the inability to track damaged or lost equipment negatively impacted replacement since there was not a clear picture of what needed to be replaced. Also, by not having a tracking process in place, it made it difficult to determine how much money was needed to replace the damaged equipment. Funding that was available to replace damaged equipment during the flood was based on the equipment’s assessed value. Since there was not a tracking process in place, some of the equipment that was damaged or lost could not be assessed, making it impossible to replace. Therefore, it is possible that some of the equipment lost or damaged due to the flood was never replaced.

**Recommendation:** Police command staff should create an asset management program that will allow them to check-out equipment to officers. In the event that any equipment should be damaged during an event, the officer will be required to check-in the damaged equipment and have new

equipment issued. Also, before any equipment is issued, the equipment that is damaged or lost during an event should be documented, along with its replacement cost.

**Issue:** Emergency surplus supplies of uniforms and equipment

**Background:** During the response to the September flood, some police officers had to enter flood waters to make rescues. In doing so, it became necessary to replace equipment and uniforms exposed to contaminated flood waters. This left the officers short on uniforms and equipment which led to a general shortage of equipment within the Evans Police Departments inventories.

**Recommendation:** There should be a surplus of uniforms and equipment stored within the Evans Police Department in the event that uniforms or equipment is damaged while responding to an event. This surplus should only be used in the event of an emergency and should be replaced as soon as possible in case additional uniforms or equipment become damaged. The sole purpose of the surplus is to provide officers with the equipment that they need to keep them in service during an emergency and will prevent officers from being taken out of service due a shortage of supplies and equipment. Command staff should determine the appropriate number of uniforms and service equipment to be kept within the surplus.

## Fire

### **Issue:** Pre-planning

**Background:** During the response to the September floods, it was identified that there was no pre-planning completed on preventing damage caused by flooding or responding to floods. During rescue operations, fire crews did not have the proper equipment to effectively support the large scale rescue operation which they were facing. Command officers did not have a resource ordering list that could be used to obtain resources to support the rescue operations. Command staff had to rely upon Weld County Communication to assist in obtaining resources. However, by the time the City of Evans was impacted by the flood, Weld County Communications was already inundated with calls throughout the county. Fire crews also did not have a copy of the evacuation plan available to assist with evacuating residents within the flood plain.

**Recommendation:** The Office of Emergency Management needs to create an annex to the Emergency Operation plan for flooding. This annex will address which departments will respond to a flood and identify which department will have command of the incident during each phase of the incident. Also, fire command staff and the emergency management coordinator should create an emergency action plan addressing how the Fire District will respond to a flooding event. All departments assisting with evacuating residents must have a copy of the evacuation plan to ensure that residents are being directed to the proper evacuation location and are accounted for.

### **Issue:** Early Notification.

**Background:** Leading up to the September floods, some staff did not respond back to duty to assist with preparation of flooding conditions. The staff members that did not return back to duty initially were unaware that flooding conditions were projected within the City of Evans. By staff not receiving early notification of the impending flood, many off-duty firefighters could not make it to the fire station after shift recalls were issued due to bridges and roads being washed-out. Staff who could not make it back to duty wished that they had received earlier notification of potential flooding conditions within the City of Evans. Firefighters indicated that if they had received notification of potential flooding conditions, they could have watched weather reports and road conditions and if needed, responded back to duty before routes to the City of Evans were closed.

**Recommendation:** The Fire District needs to develop a notification system whereby command staff can alert staff of a potential threat to the Fire District. By giving staff early notification when possible, command staff can determine who may be available to backfill regular staffing for the Fire District. By alerting staff of potential threats, they can be better prepared and available to respond back to the district in case a shift recall is issued.

**Issue:** Communication with Weld County Emergency Operation Center

**Background:** During the response to the flood, there were times where fire command had difficulties communicating with fire dispatch. The Weld County Communication Center was overwhelmed with radio traffic created by the floods impacting most of Weld County. The Weld County Communication Center experienced significantly increased call volume due to the floods and were managing all flood related calls along with non-flood related calls. There were times that command attempted to communicate with dispatch, but there was so much traffic on the radios that they could not connect. Due to dispatch being overwhelmed, it was difficult to order resources which led to a delay in the response efforts. Fortunately there were not any safety issues related to communication difficulties with dispatch, but the risk was there.

**Recommendation:** While the City of Evans is in the process of getting their Emergency Operation Center up and running, the breakdown of communication with dispatch should be resolved. In the event of a disaster, fire command can contact the City of Evans Emergency Operation Center to order resources as needed. The City of Evans Emergency Operation Center can also act as a liaison between the Fire District and the Weld County Emergency Operation Center. In the event that the Emergency Operation Center is not operational and there are multiple incidents occurring within the City of Evans, the incidents can be merged under a unified command and can be split into divisions with all resource ordering funneled through a single point of contact.

**Issue:** Outside Communications (report writing).

**Background:** During the flood, several fire departments from around the State assisted the Evans Fire Protection District with rescue operations and staffing. Fire departments that staffed the station also assisted the Evans Fire Protection District with running calls throughout the Fire District. At the conclusion of the flood, command staff with the Evans Fire Protection District audited the run reports that were completed during the response period of the flood and discovered there were a number of call reports missing during that time period. Most of the missing reports were from fire departments staffing the Evans Fire Station and responded to calls with the Evans Fire District. This caused a gap in the Fire District incident reporting system

**Recommendation:** The Evans Fire Protection District command staff needs to develop a system to meet the needs of the district to ensure that every call dispatched has a run report that closes out the call. This process can include a policy that outlines how and who is responsible for ensuring this task is completed. Another method to resolve this issue is to keep a log of runs that supporting departments run on behalf of the Evans Fire Protection District and attach those reports to the Evans fire report for that call.

**Issue:** Documentation

**Background:** After the flood waters receded and recovery was underway, documentation review began. One of the issues uncovered was that at the beginning of the flood event, the Fire District was keeping track of all the calls that were coming in, but by the end of the response period, not all the calls were documented. There was also not any documentation regarding how many people were rescued

**Recommendation:** The command staff of the Evans Fire Protection District should create a policy that outlines the best method whereby staff completes documentation for large scale incidents. This policy will help ensure that all important information is documented and can be referenced at a later time.

**Issue:** Sheltering

**Background:** For some time there has been confusion regarding use of the Fire Station as a shelter. In years past, former Fire Chiefs have advised residents located in the mobile home park next door to the Fire Station that they could use the Fire Station as a shelter if needed. Some staff are not comfortable with the idea of the Fire Station being used as a shelter since this is their work and living space while on duty. Also, there is a security concern with leaving residents at the Fire Station while crews are responding to calls.

**Recommendation:** Evans Fire Protection District command staff needs to determine if the Fire Station can be used as a shelter for residents during a disaster. Once the decision has been made, a policy should be created outlining how the station will function during a disaster. Also, all fire staff should be made aware of the policy.

**Issue:** Distinguishing the difference between an Incident Command Post and an Emergency Operation Center.

**Background:** During the first couple of operational periods during the flood, the City of Evans Emergency Operation Center was located within the training room at Evans Fire Station #2. With the Emergency Operation Center located at the Fire Station, it interrupted fire department operations and caused confusion for a lot of the firefighters. Many of the firefighters were confused regarding the purpose of the Emergency Operation Center and later mistook the Emergency Operation Center for the incident command post.



**Recommendation:** To minimize confusion and for logistical reasons, the Emergency Operation Center should not be in the Fire Station. The Emergency Operation Center should be located in the Evans Community Complex with a back-up Emergency Operation Center designated elsewhere. Depending on the nature of the incident and its location; the incident command post could be located within the Evans Fire Station, which should be determined by Evans Fire command officers. Identified officers and firefighters could fill-in as acting officers and should attend an incident command/ emergency operation interface class to understand how the functions work together.

**Issue:** Dividing the area into divisions with multiple jurisdictions.

**Background:** The flood that impacted the region in September washed-out many roads and bridges throughout Weld County. Due to access issues throughout the County, many jurisdictions, including Evans Fire District, were cut off from residents that needed assistance. Jurisdictions were attempting to find alternate routes to reach residents that needed help. Many jurisdictions did not utilize surrounding departments to assist with calls even though they were better able to reach those in need. This delay meant that rescues and medical care could have been delayed while units worked to reach those calling for help.



**Recommendation:** To overcome access issues caused by washed-out roads and bridges, the area could have been divided into divisions. Jurisdictions then could rely on other jurisdictions to cover calls in areas they could not reach. Many departments around the region and the state are adopting Blue Card certifications. The Blue Card principles process could be used along with ICS 300 and 400 concepts. Staff from all surrounding agencies should use the Blue Card, ICS 300/400 principles in an incident such as this. All surrounding departments should train together to understand what each organizations capabilities and weakness are. To make this process successful, MOU's or IGA's need to be signed and in place before a disaster strikes. All MOU's and IGA's need to be reviewed, revised, and signed annually to ensure that they are current and each organization understands the terms in the agreements.



**Issue:** Command Decision making.

**Background:** There were only a few people within the City of Evans or Evans Fire Protection District that had prior experience with an incident the magnitude of the September floods. Command staff was faced with making difficult decisions as the incident unfolded and some of those decisions had to be amended even as the incident progressed. The biggest challenge that command staff had with making decisions was due to inexperience in managing an incident of this magnitude.

**Recommendation:** Everyone who was involved in responding to the flood needs to take their experience, learn from it and grow from it. Command staff needs to reflect back on what did or did not work and find ways they could have made the situation better. Command staff should look into taking additional tactical and decision making classes or all-hazard incident management courses. Some of the classes that command officers can consider taking include Operation Section Chief, Command and General Staff. There are also many After Action Reports available that can be accessed and reviewed.

**Issue:** Swift Water Training, equipment, etc.

**Background:** During the response to the flood, the Evans Fire Protection District made forty-two water rescues and assisted in getting over one-hundred residents to safety. This placed a huge strain on the department since there were only 3 firefighters who were swift water rescue technicians or dive rescue certified. The team was also faced with not having the proper equipment to handle this magnitude of a rescue operation. The Evans Fire Protection District relied heavily on the Greeley Fire and Kersey Fire Protection Districts support in managing all the rescue operations.



**Recommendation:** The Evans Fire Protection District needs to look at what their capabilities are, if they can manage this type of rescue operation and if they have enough staff to safely manage this type of operation. The Fire District should also complete a needs assessment to determine what type of equipment, staff, and training they need to meet this level of service. Once the Fire District has completed a capabilities and needs assessment, they should get the needed staff certified, purchase equipment, and complete routine training for staff to maintain their skills and

familiarity with their equipment. Also, the Fire District needs to consider IGA's or Mutual Aid agreements with Greeley Fire and Kersey Fire Protection to use or combine all three teams into a regional team to maintain an effective swift water team. By signing IGA or Mutual Aid agreements with Greeley Fire and Kersey Fire Protection Districts, it will help manage the cost of maintaining a swift water and dive rescue team.

**Issue:** Evaluate notifications procedures.

**Background:** During the rescue operations, some of the residents informed firefighters that they did not receive any evacuation notices. Some of the reasons that were identified included language barriers, communication barriers, or income barriers. Some of the residents did not have home phones so they did not receive evacuation notifications from 911. Evans Police and the Evans Fire Protection District did go door by door to notify residents, but there were language barriers, some residents didn't believe they were in danger and did not want to evacuate. Some of the residents that did not want to evacuate initially stated they had experienced flooding near their homes in the past and had not been affected. Many residents had false hope the berm separating their homes from the South Platte River would protect them as they believed it had in the past.

**Recommendation:** With help from the City of Evans Office of Emergency Management and the City of Evans Communication Department, the Evans Fire Protection District needs to educate the public on emergency notification and evacuation notifications. In coordination with the Weld County Communication Center, Weld County Office of Emergency Management, the City of Evans Office of Emergency Management needs to look at Weld County's Emergency notification policy and their emergency notification system to ensure that they meet the needs of the community.

**Issue:** Resources –available- obtaining. (Most issues were at the operations level).

**Background:** During the incident, Evans Fire command did not have a clear picture of what resources were available. After the City of Evans opened their Emergency Operation Center, Evans Fire command was not sure where to order resources. Evans fire command was not sure if they ordered resources through Weld County Communication Center, City of Evans Emergency Operation Center, or Weld County Emergency Operation Center.

**Recommendation:** The Evans Fire Protection District should have a list of resources available within the City of Evans and surrounding jurisdictions. Fire command officers should complete training with emergency management throughout the year. Fire command officers should also participate in exercises within the emergency operations center to gain a better understanding of what role the Fire District may have within the Emergency Operation Center. By training with emergency management throughout the year, officers will have a better understanding of how the Emergency Operation Center supports operations during a disaster. There are classes available that officers can take in order to gain a better understanding of how the Emergency Operation Center

supports operations; two specific classes that can benefit officers include Command and General Staff and IC/EOC interface classes.

**Issue:** Individuals in positions that they shouldn't be in.

**Background:** Due to the complexity of the incident, crews expressed that some staff members were placed into positions they were unqualified for. While no specifics were provided, staff members did relay that this circumstance created trust and safety issues for many. While there were no specific safety issues identified in direct connection with staff filling roles beyond their experience levels, the risk was there and made the crews uncomfortable.

**Recommendation:** Command staff needs to identify roles that staff can appropriately fill during a disaster. Each staff member should be properly trained in tasks that they will be responsible for during a disaster. During large scale incidents, when staffing is an issue like they were in the September floods, individuals will have to step up and take on new roles that they are not familiar with. However, it is the responsibility of command to ensure that the right individuals are placed appropriately. It is also the responsibility of command to ensure that individuals placed in these roles have the appropriate training or guidance to complete their tasks safely.

**Issue:** Clarification on shift recall (only used when additional personnel are needed and is mandatory).

**Background:** In the past whenever there was a structure fire or a major accident within the City of Evans, the company officer on duty would request that dispatch notify off duty staff to come in to staff the station. As the department has progressed and changed over the years, confusion has set in as to when or if a company officer should request a staff recall. The over usage of the system has burned out staff and now some staff do not respond to the shift recall request. There also has not been any clear guidance regarding whether this is a mandatory policy or not. Due to the overuse of shift recall and no indication that the policy is mandated, staff may not respond to the shift recall, leaving the district uncovered or a call understaffed.

**Recommendation:** Fire command staff needs to look at what the needs of the Fire District are and if or when a staff recall is needed. Once the decision has been made, a policy should be drafted and implemented. Included in the policy should be the purpose of the policy, when to issue a shift recall, and if it is mandatory. Once the policy has been created and implemented, all staff should receive training on the policy to ensure that everyone is familiar with it. The policy should be reviewed and revised annually to ensure that it meets the needs of the Fire District.

**Issue:** Staffing (work/RR)

**Background:** During the flood the Fire District was short staffed, causing staff to work additional hours to cover flood related operations as well as normal daily calls for service. Some staff were working up to 16-20 hours without rest. Also, some firefighters worked in excess of their forty-eight hours due to staffing shortages or the inability to return home due to road conditions. In the environment that the crews were working, crews were exposed to health and safety risks. Crews experienced fatigue brought on by working extra hours and performing out of the ordinary tasks.

**Recommendation:** During an event such as the September floods, when staffing needs to be increased and work hours are extended, it is paramount to manage staffing. The Fire District needs to look at policies that indicate the maximum number of hours in which staff can work before taking time off. Just as important as the number of hours that staff can work during a shift, the policy should cover how much time off is required between shifts. Also, during an event, an officer or a senior firefighter should be assigned to manage staffing to ensure that crews are following policies and staff is getting the rest needed to prevent injuries and prevent staff burnout

**Issue:** Communication- top down

**Background:** During the September floods, most crews felt that there was a breakdown in communication from top management down. Most firefighters felt like they did not have a clear understanding of the departments' goals during the flood or what was expected of them from top management. Most of the crews also felt that top management was not around enough during the incident to give them updates on the incident or to give them any guidance on their objectives or for the mission. Most of the crews felt that they were tasked with making tactical decisions on their own.

**Recommendation:** To assist with closing the communication barrier from top down, there needs to be training completed by the entire department on communication, both from the top down and from the bottom up. Top management, company officers, and crews need to learn how to communicate better with each other. During an event such as a flood, it is imperative that management briefs staff to ensure that crews know what their goals and objectives are and most importantly to show that they are supported.

## Wastewater Treatment Plant

**Issue:** Head Gates flooded.

**Background:** Due to unprecedented flooding, soon after failures in the berm occurred, flood water rapidly approached the Wastewater Treatment Plant 1. Due to the high water, head gates within Wastewater Treatment Plant 1 were overrun, causing the pumps to get flooded and shut down. With the pumps not working, the City of Evans was forced to shut down the wastewater treatment plant, leaving over seventy percent of the residents in Evans without sanitation services.

**Recommendation:** Build flood walls around the wastewater treatment plant that can be activated before flood water reaches the plant. When activated, the flood walls will prevent water from entering the pumps and prevent them from shutting down.

**Issue:** Treatment Plant inoperable.

**Background:** Due to the pumps being flooded and ponds at the Wastewater Treatment Plant 1 covered with flood water, the City of Evans was forced to shut down the wastewater treatment plant. Wastewater Treatment Plant 1, was inoperable for eight days, during which time the City of Evans implemented a no-flush notice. The no-flush notice left seventy percent of homes and businesses with the City unable to use the sanitation system. Residents could not flush their toilets during this time and local businesses were forced to close during this period since they did not have any sanitation systems.



**Recommendation:** There are a couple of recommendations for the City to prevent a future Wastewater Treatment Plant shut down due to flooding. One is to raise the elevation of Wastewater Treatment Plant 1 to move it further out of the flood plain. Another recommendation is to install flood gates that will prevent water from entering the treatment plant. A final recommendation the City can look into is to combine Wastewater Treatment Plant 1 and the Hill-n-Park Plant on the west side of town. By combining the two plants and moving most of the operations to the Hill-n-Park Plant, this will move the plant out of the flood plain and will reduce the risk of the plant being

compromised during a flood. All these options and others need to be evaluated by Wastewater Treatment Plant staff, engineers, and have the approval from City Council.

**Issue:** Insurance on the Wastewater treatment property.

**Background:** After the flood water receded and all the damage to the Wastewater Treatment Plant was visible, the recovery process started. During the recovery process, it was determined that the Wastewater Treatment Plant was not insured and the City of Evans would have to make all the repairs to the facility with money out of their regular budget. It is estimated that damage to the Wastewater Treatment Plant reached \$2.5 million.

**Recommendation:** The City of Evans needs to look into insuring the Wastewater Treatment Plant facility. This is critical infrastructure that residents rely upon. There are a number of natural disasters that threaten that facility, making insurance on the property a high priority that should be purchased as soon as possible.

**Issue:** Emergency supplies.

**Background:** When Wastewater Treatment Plant 1 was forced to shut down, the decision was made to divert incoming sewer lines to lines feeding the City of Greeley Wastewater Treatment Plant. This project required additional piping and pumps to make the project successful. However, it was discovered that the piping was hard to obtain and took a couple of days to arrive. All the piping that was needed was located out of state, which led to a delay in its arrival. The pumps that were needed were a little easier to obtain since they were local. The delay in receiving the pipe was huge since the City of Evans was at risk of sewer lines backing up into homes since there was nowhere else for the waste water to go in case residents did not follow the no-flush order.



**Recommendation:** The City needed to look at obtaining an emergency supply of piping and pumps in case the Wastewater Treatment Plant ever became inoperable in the future. This could be accomplished either by the City of Evans purchasing and storing the supplies, signing MOU's with private contractors or other jurisdictions to have needed material local and available in the event that they are ever needed in the future.



**Issue:** Mutual Aid Agreements.

**Background:** During the flood, it was determined that there were not mutual aid agreements in place to assist with the response to restoring operation at Wastewater Treatment Plant 1. It was determined that if the City of Evans had any mutual aid agreements in place at the time of the flood; equipment, supplies, and manpower could have responded to assist the City of Evans sooner.

**Recommendation:** The City of Evans needs to look at creating mutual aid agreements with surrounding communities or throughout the region and the state. There may be some cost associated with the MOU's, so the City may need to budget for the program. By having mutual aid agreements in place it may shorten the time that the Wastewater Treatment Plant may be inoperable as well as the time that residents and business are without sanitation and not able to flush their toilets.



**Issue:** Emergency Action Plan.

**Background:** During the response to restoring Wastewater Treatment Plant 1, there was not a plan in place regarding how to respond in the event the wastewater treatment had to shut down. By not having an emergency action plan in place, decisions and plans had to be made during the response which slowed down restoring operations to the plant.

**Recommendation:** Public Works needs to develop an emergency action plan that will address every issue that could occur at the plant requiring emergency action. This plan should be similar to a checklist of what needs to be done, but still be flexible so that it could be adjusted to meet the needs of any type of emergency.

## Finance

**Issue:** Defining the procurement process

**Background:** During the flood there was not a clear definition of the procurement process. There was confusion regarding who could order equipment and supplies. There also was a great deal of confusion regarding procedures to request funding for needed equipment and supplies.



**Recommendation:** The Finance Department needs to create a procurement policy that addresses how to make purchases during a disaster or in an emergency. This policy should be shared with all the departments and with the Emergency Operation Center. The policy should also be tested periodically to ensure that it meets the needs of the City and that everyone is familiar with the process in the event that it needs to be implemented.

**Issue:** Tracking of costs early in a disaster.

**Background:** During the flood there were a number of purchases made early in the event that were never properly recorded. This made it difficult for finance, which had to go back and track down the charges, leading to some purchases being missed since they were not captured at the time that they were made. Also due to some of the charges not being tracked early on, some of the funds that were spent could not be reimbursed since they were not tracked and accounted for.

**Recommendation:** Create a tracking system that can be implemented quickly and is easy to use. This new tracking system should be given to every department to use in the event of a disaster. This will allow costs to be tracked in the event that finance is not available. The tracking system should be able to move from the field to the Emergency Operation Center in the event that the event escalates, the finance department is activated and can continue to add to the list of costs for the event. Once the system is developed, staff should be identified to manage the tracking system and be trained on the program. The system should also be tested through exercises to ensure that the system works and that it meets the needs of the City.

**Issue:** Determination of how long emergency funds are available.

**Background:** During the early response phase of the flood, there was some confusion regarding how long emergency funds were available. It was discovered during the reimbursement phase that some of the funds used to make repairs were classified as emergency repairs. However, some of the repairs were made after the allotted time and were considered permanent repairs. This created more work for finance to reclassify the expenditures and slowed down the reimbursement process.

**Recommendation:** The Finance Department and staff identified as working in finance during a disaster should take some finance specific courses for emergency operations centers. These courses will allow staff to have a better understating of their roles during an emergency and also learn some of the expectations from FEMA to ensure a clearer reimbursement process.

**Issue:** NIMS training for staff that will be filling roles in an EOC.

**Background:** It was determined that some of the staff that helped during the flood did not have some of their basic NIMS certifications completed and were overwhelmed by the process.

**Recommendation:** The City of Evans needs to implement a policy that every city employee has their basic NIMS certifications. Also create a policy that all managers and any staff that work in the Emergency Operation Center complete advanced ICS training and attend position specific courses to ensure that staff are trained in the roles that they will fill during an emergency.

**Issue:** Accessing Emergency funds.

**Background:** There was not a clear procedure on accessing emergency funds to help cover equipment, supplies, manpower, or emergency repairs. This led to some confusion and also caused a delay in the recovery process.

**Recommendation:** Create a check list for staff on how to access emergency funds in the event that they are needed during a disaster. Once the process has been completed, staff should be trained on the checklists. There should also be exercises completed on the process so that staff are familiar with it and to ensure it meets the needs of the City and the Finance Department.

## Recovery

**Issue:** Business and economic plans for disasters.

**Background:** It was identified in the recovery process that the City of Evans did not have a plan in place to assist or to reach out to businesses impacted by a disaster. Many of the businesses within the City were not directly impacted by the flood and did not receive any water damage due to the flood. However, many businesses within the City were forced to close for eight days due to the no-flush order issued by the City as a result of the Wastewater Treatment Plant shutting down.

A major portion of the budget for the City of Evans is based on tax revenue it collects from the business sector. When businesses have to close their doors, their sales go down, which causes the cities tax revenues to go down. So not only was the City faced with the costly repairs to bring the Wastewater Treatment Plant back up and running, but they lost income from all the businesses forced to close their doors while repairs were being made to the Wastewater Treatment Plant. Another issue that could have come from this is that many of the small businesses are residents of Evans. If repairs to the Wastewater Treatment Plant took longer than they did, it is possible that not only would the business owners lose their business, but could have lost their home too. This could lead to a huge impact to the City due to the decrease in both tax revenue and population.

**Recommendation:** It was recommended that the city look into creating a program to reach out to businesses affected by a disaster. The plan should include an assistance program that could help businesses for a short time during the aftermath of a disaster, while they are seeking other types of assistance. There also needs to be training offered to local businesses on how they can prepare and protect their business from a disaster.

**Issue:** Business Continuity plans.

**Background:** It was discovered during the initial recovery phase following the flood that many businesses did not have a continuity of operations plan developed. By not have a continuity plan in place, many of the businesses struggled with maintaining their companies and recovering from closing their doors for eight days.

**Recommendation:** The City needs to look at how they can assist local businesses during a disaster. More importantly, the City should look at reaching out to local businesses and offer classes on the importance of continuity of operations plans, how to develop a plan for their business, and if needed assist business owners in creating a continuity of operations plan.



**Issue:** Community outreach and communication

**Background:** During the initial recovery phase and development of the recovery plans, there was some resistance from residents regarding some of the mitigation plans being considered. One of the biggest concerns residents shared with the City was the consideration of removing portions of the berm along the South Platte River. The failures of the berm in several locations led to the significance of the flooding. Due to the construction of the berm, and the geographical terrain around the berm, engineers have determined that it would be in the best interest of the City to remove the berm and to create a more natural rise in elevation to prevent future flooding as was experienced during September 2013. Many residents felt that the findings are misleading and in fact the berm has protected the area since the 1960's.



**Recommendation:** One recommendation to consider when presenting the new concept to the public is to show them illustrations of the benefit of the concept. One way would be to create a flood modeling with and without the berm in place. The modeling will not only show the benefit of having the berm removed, but will also reassure the public that the City has the communities' safety and interest in mind when creating new concepts.

**Issue:** Assistance from state government during recovery.

**Background:** From the start of the recovery process the City of Evans had a very difficult time working with the state. With recovery under the Department of Public Safety and not under DOLA, the process was not well streamlined. Under that structure, the focus was more on the response to a disaster and not as much on recovery or mitigation. The City had to follow-up repeatedly with the state regarding their recovery policies and procedures. Nowhere in the state was there a streamlined policy on the recovery process.

There were also huge communication barriers between state agencies, and contradictory advice given to the City. The difficulties that the City of Evans experienced from the state led to delays in starting the recovery process. There were several incidents where the City was informed how to move forward in the recovery process which was then stopped and the process started again because inaccurate or misleading information was provided by the state.

**Recommendation:** The City of Evans and surrounding communities affected by the September floods should work with the state and come to an understanding of the recovery process and how to work with state and local governments. One recommendation made was for the state to consider

moving recovery back under DOLA. DOLA has the experience in managing recovery and serves a major role in recovery after a disaster.

**Issue:** City of Evans' Comprehensive Master Plan outdated.

**Background:** Before the flood the Master Plans for the City of Evans had not been updated in ten or fifteen years. It was noted that if the Master Plans had been up to date, recovery funds could have been used to make improvements based on the Master Plans. However, since those plans were not up to date, the recovery process was delayed and final repairs and improvements cannot be completed until the Master Plans have been updated and approved.

**Recommendation:** The Master Plan needs to be developed and updated to meet the current and future needs of the City. Once the Master Plan has been developed, the plan should be reviewed every three years and revised every five years to ensure that the City is keeping up with community needs and new regulations.

**Issue:** Recovery not included in emergency funding process.

**Background:** It was noticed that once recovery was started there were no emergency funds set aside to assist with immediate recovery needs. Most of the funds that were used from the emergency funds covered emergency repairs and staff overtime while responding to the flood.

Staffing was another issue in the recovery phase. The burnout rate of staff was high since most staff were tasked with projects related to flood recovery in addition to their daily jobs. There were no funds available to hire additional staff to support the recovery effort. Many of the positions that needed to be filled took about six months to fill due to the lack of available funds and the grant writing process.

**Recommendation:** The first consideration for the City is to determine what their essential needs are to begin recovery after a disaster. Once the needs are determined and identified, the next step is to see if the City is currently set up to support the needs with available man power and available funds. If not, additional funds should be written into the budget for emergencies to enable recovery to begin while grants and other funding sources are being processed.

**Issue:** Not including local governments in the process of hiring experts to assist with recovering from disasters.

**Background:** After the flood, the state hired liaisons that were experts in many different areas around flood recovery and grant writing. However, the state hired these experts and assigned them to areas throughout the state without including any of the communities that were assigned the experts to be part of the process. This led to a loss of trust since the local government and communities were not part of the process and did not have a solid back ground on the experts assigned to their communities. Since the City of Evans was not part of the process of hiring the experts, when they arrived to assist the City with the recovery process, there was a lot of time lost



while trust was being built and the City began to feel comfortable with the advice the expert was providing.

**Recommendation:** In the event of another disaster and there is a need to hire experts to assist communities with the recovery process, local governments should be allowed to hire the experts they feel are the best fit for the needs of their community and their situation. At the least, local governments should be part of the process to ensure that the needs of the City are met along with those of the state in order to have an understanding of the expert's background. Both processes will ensure that the City feels their needs are being met, that the City knows what the background of the expert is and will prevent any delay in the recovery process.

**Issue:** Adding state liaisons to the resource ordering list for policy and grant writing support.

**Background:** In the aftermath of the floods, there were a number of policies the City had to follow to ensure they could receive the maximum amount of financial support available. Since the City had never experienced a disaster of this magnitude, most of the city staff was new to the recovery process and were unsure of the complexities of policies from the state and FEMA. There were a number of grants available that the City could apply for to assist with the recovery process, however it was hard to know which grants to apply for. Additionally, many of these disaster specific grants are hard to write successfully. It took some time for the City to receive a liaison to assist them with the policies and all of the grants.

**Recommendation:** Create a resource list of state officials who are experts in policies on recovery from the state that the City can call on to assist with recovery efforts. Another recommendation is to include grant writers on resource lists so they are identified early on and shorten the time it takes to start writing grants. Finally, create a list of the different types of grants available so that in the event of a disaster, grants can be quickly accessed to determine which one will fit the needs of the City and the grant writing process can begin as soon as the grants are available.